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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,089	08/22/2001	Naoyuki Mochida	33871	9338

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EXAMINER

WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/935,089	Applicant(s) MOCHIDA ET AL.	
	Examiner James S. Wozniak	Art Unit 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 9/20/2004, the applicant has submitted an amendment, filed 12/14/2004, amending Claims 1, 11, and 13, while arguing to traverse the art rejection based on the limitations regarding a variable threshold and a continuation monitoring timer (*Amendment, Pages 9-10*). The applicant's arguments have been fully considered but are moot with respect to the new grounds of rejection in view of Hatono et al (*U.S. Patent: 5,914,936*).

2. Due to the amendments of Claims 11-13 the examiner has withdrawn the previous claim objections directed towards improper multiple dependent claims.

Response to Arguments

3. With respect to **Claim 1**, the applicant argues that Kramer et al (U.S. Patent: 6,658,027) fails to teach a variable high water mark threshold (*Amendment, Page 9*), however the examiner points out that Kramer discloses such a feature in Col. 6, Line 10 and Col. 10, Lines 11-25.

Claim Objections

4. **Claim 2** is objected to because of the following informalities: “such a time period” in line 18, should be changed to --a time period-- in order to overcome a lack of proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1, 5/1, 12/1, and 13/1** are rejected under 35 U.S.C. 102(e) as being anticipated by Kramer et al (*U.S. Patent: 6,658,027*).

With respect to **Claim 1**, Kramer discloses:

A packet receiving unit for receiving a real-time information packet which is transmitted at a constant coding speed, while having a constant packet length (*receiver, Col. 3, Lines 31-52, and Fig. 1, Element 100*);

A jitter-absorbing buffer for temporarily storing the real-time information packet received by said packet receiving unit (*jitter buffer, Col. 3; Lines 53-61, and Fig. 1, Element 120*);

A decoding unit for decoding data stored in said jitter absorbing buffer (*vocoder, Col. 3, Line 61- Col. 4, Line 2, and Fig. 1, Element 130*);

Packet number judging means for measuring a total number of packets stored in said jitter absorbing buffer and for comparing said measured total packet number with a preset threshold value, and also for notifying the comparison result to a continuation monitoring timer, said threshold value being variable (*detection of whether a jitter buffer is full, Col. 7, Lines 61-63; and variable threshold, Col. 6, Line 10, and Col. 10, Lines 11-25, and silence continuation time interval detector, Col. 10, Lines 26-43*); and

Data discarding means for discarding either a portion or all of the packets stored in said jitter absorbing buffer based upon the comparison result of said packet number comparing means (*frame deletion, Col. 7, Lines 61-63, and jitter buffer manager, Fig. 1, Element 140*).

With respect to **Claim 5**, Kramer further recites:

Data discarding means discards either a portion or all of the packets stored in said jitter absorbing buffer in the unit of a packet (*frame deletion, Col. 5, Lines 51-67, and Col. 7, Lines 61-63*).

With respect to **Claim 12**, Kramer further discloses a low water mark relating to buffer underflow (Col. 6, Lines 19-32).

With respect to **Claim 13**, Kramer teaches the high water mark as applied to Claims 1-3. Upon exceeding the high water mark frames are deleted until the mark exceeding condition is eliminated (Col. 5, Lines 36-67).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 2, 5/2, 6/1, 6/2, 7/6/1, 7/6/2, 8/7/6/1, 8/7/6/2, 9/8/7/6/1, 9/8/7/6/2, 10/9/8/7/6/1, 10/9/8/7/6/2, 12/2, and 13/2** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer et al (*U.S. Patent: 6,658,027*) in view of Hatono et al (*U.S. Patent: 5,914,936*).

With respect to **Claim 2**, Kramer discloses:

A packet receiving unit for receiving a real-time information packet which is transmitted at a constant coding speed, while having a constant packet length (*receiver, Col. 3, Lines 31-52, and Fig. 1, Element 100*);

A jitter absorbing buffer for temporarily storing the real-time information packet received by said packet receiving unit; a decoding unit for decoding data stored in said jitter absorbing buffer (*jitter buffer, Col. 3, Lines 53-61, and Fig. 1, Element 120*);

Packet number judging means for measuring a total number of packets stored in said jitter absorbing buffer and for comparing said measured total packet number with a preset threshold value, (*detection of whether a jitter buffer is full, Col. 7, Lines 61-63*); and

Data discarding means for discarding either a portion or all of the packets stored in said jitter absorbing buffer (*Col. 5, Lines 51-67*).

Kramer does not specifically suggest a second threshold comparison, wherein the second threshold comparison is based upon a buffer overflow (exceeded threshold) occurring for a certain time period, however Hatono teaches the use of a timer and an elapsed time period in determining the seriousness of data congestion at a buffer (*Col. 10, Lines 30-42 and Col. 4, Lines 3-16*).

Kramer and Hatono are analogous art because they are from a similar field of endeavor in data transmission systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kramer with the use of a timer in determining the degree of data congestion at a buffer to implement efficient buffer control when congestion occurs that cannot recover naturally by detecting such a condition through an elapsed time of exceeding a buffer threshold (*Hatono, Col. 4, Lines 3-16*).

With respect to **Claim 5**, Kramer further recites:

Data discarding means discards either a portion or all of the packets stored in said jitter absorbing buffer in the unit of a packet (*frame deletion, Col. 5, Lines 51-67, and Col. 7, Lines 61-63*).

With respect to **Claim 6**, Kramer additionally suggests:

Data discarding means discards either a portion or all of the packets stored in said jitter absorbing buffer in the unit of a byte (*discarding a frame portion, Col. 11, Line 66- Col. 12, Line 1*).

Although Kramer does not specifically suggest discarding a frame portion in the unit of a byte, the examiner takes official notice that a byte is a well-known subunit that comprises a data frame. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of

invention, to delete a frame portion in the unit of a byte so as to provide a well-known data unit for partial frame deletion, thus conserving additional valuable (speech) data that a frame may contain.

With respect to **Claim 7**, Kramer further recites:

Data discarded by said data discarding means corresponds to such data that may give a small adverse influence to a transmission quality when being discarded (*deletion of silence frames, Col. 4, Lines 16-34*).

With respect to **Claim 8**, Kramer additionally discloses:

Real-time information packet corresponds to a voice packet (*VoIP, Col. 3, Lines 53-61*);
and

The data-discarding unit is comprised of: a non-voice portion-detecting unit for detecting a non-voice portion of voice information stored in said jitter absorbing buffer and a discarding unit for discarding either a portion or all of said detected non-voice portions; and said data discarding means discards only the detected non-voice portion when the data discarding operation is carried out (*voice activity detector and deletion of silence frames, Col. 4, Lines 16-34, and Col. 5, Lines 51-67*).

With respect to **Claim 9**, Kramer further recites:

Non-voice portion detecting unit notifies information as to such a non-voice portion which should be discarded within said detected non-voice portions to said discarding unit; and said discarding unit discards only said notified non-voice portion (*VAD sending a silence detection result to a jitter buffer manager, Col. 4, Lines 16-34, and Col. 5, Lines 51-67*).

With respect to **Claim 10**, Kramer additionally discloses:

Non-voice portion detecting unit divides said detected non-voice portion by using a block having a preselected fixed length as a dividing unit, and notifies such a block except for a head block thereof and a tail block thereof as said block which should be discarded to said discarding unit (*detecting and deleting only a silence portion from a frame, Col. 11, Line 66- Col. 12, Line 4, which would inherently require a silence portion dividing means. Also, since only a silence portion would be deleted, it would be inherent that the header and tail block of the frame would be retained.*).

With respect to **Claim 12**, Kramer further discloses a low water mark relating to buffer underflow (Col. 6, Lines 19-32).

With respect to **Claim 13**, Kramer teaches the high water mark as applied to Claims 1-3. Upon exceeding the high water mark frames are deleted until the mark exceeding condition is eliminated (Col. 5, Lines 36-67).

9. **Claims 3, 4, 5/3, 5/4/3, 6/3, 6/4/3, 7/6/3, 7/6/4/3, 8/7/6/3, 8/7/6/4/3, 9/8/7/6/3, 9/8/7/6/4/3, 10/9/8/7/6/3, 10/9/8/7/6/4/3, 11/1, 11/2, 11/3, 11/4/3, 12/3, 12/4/3, 13/3, and 13/4/3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer et al (*U.S. Patent: 6,658,027*) in view of Saito et al (*U.S. Patent: 5,541,926*).

With respect to **Claim 3**, Kramer recites:

A packet receiving unit for receiving a real-time information packet which is transmitted at a constant coding speed, while having a constant packet length (*receiver, Col. 3, Lines 31-52, and Fig. 1, Element 100*);

A jitter absorbing buffer for temporarily storing the real-time information packet received by said packet receiving unit; a decoding unit for decoding data stored in said jitter absorbing buffer (*jitter buffer*, Col. 3, Lines 53-61, and Fig. 1, Element 120);

Packet number judging means for measuring a total number of packets stored in said jitter absorbing buffer after a communication is commenced and for comparing said measured total packet number with a preset threshold value, (*detection of whether a jitter buffer is full*, Col. 7, Lines 50-63); and

Data discarding means for discarding either a portion or all of the packets stored in said jitter absorbing buffer (Col. 5, Lines 51-67).

Kramer does not specifically suggest a second threshold comparison, wherein the second threshold comparison is based upon a buffer overflow (exceeded threshold) occurring for a certain time period, however Hatono teaches the use of a timer and an elapsed time period in determining the seriousness of data congestion at a buffer (Col. 10, Lines 30-42 and Col. 4, Lines 3-16).

Kramer and Hatono are analogous art because they are from a similar field of endeavor in data transmission systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kramer with the use of a timer in determining the degree of data congestion at a buffer to implement efficient buffer control when congestion occurs that cannot recover naturally by detecting such a condition through an elapsed time of exceeding a buffer threshold (*Hatono*, Col. 4, Lines 3-16).

With respect to **Claim 4**, Kramer teaches the jitter buffer management system as applied to Claim 3, while Saito teaches the jitter buffer timer as applied to Claim 3.

With respect to **Claim 5**, Kramer further recites:

Data discarding means discards either a portion or all of the packets stored in said jitter absorbing buffer in the unit of a packet (*frame deletion, Col. 5, Lines 51-67, and Col. 7, Lines 61-63*).

With respect to **Claim 6**, Kramer additionally suggests:

Data discarding means discards either a portion or all of the packets stored in said jitter absorbing buffer in the unit of a byte (*discarding a frame portion, Col. 11, Line 66- Col. 12, Line 1*).

Although Kramer does not specifically suggest discarding a frame portion in the unit of a byte, the examiner takes official notice that a byte is a well-known subunit that comprises a data frame. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to delete a frame portion in the unit of a byte so as to provide a well-known data unit for partial frame deletion, thus conserving additional valuable (speech) data that a frame may contain.

With respect to **Claim 7**, Kramer further recites:

Data discarded by said data discarding means corresponds to such data that may give a small adverse influence to a transmission quality when being discarded (*deletion of silence frames, Col. 4, Lines 16-34*).

With respect to **Claim 8**, Kramer additionally discloses:

Real-time information packet corresponds to a voice packet (*VoIP, Col. 3, Lines 53-61*);
and

The data-discarding unit is comprised of: a non-voice portion-detecting unit for detecting a non-voice portion of voice information stored in said jitter absorbing buffer and a discarding unit for discarding either a portion or all of said detected non-voice portions; and said data discarding means discards only the detected non-voice portion when the data discarding operation is carried out (*voice activity detector and deletion of silence frames, Col. 4, Lines 16-34, and Col. 5, Lines 51-67*).

With respect to **Claim 9**, Kramer further recites:

Non-voice portion detecting unit notifies information as to such a non-voice portion which should be discarded within said detected non-voice portions to said discarding unit; and said discarding unit discards only said notified non-voice portion (*VAD sending a silence detection result to a jitter buffer manager, Col. 4, Lines 16-34, and Col. 5, Lines 51-67*).

With respect to **Claim 10**, Kramer additionally discloses:

Non-voice portion detecting unit divides said detected non-voice portion by using a block having a preselected fixed length as a dividing unit, and notifies such a block except for a head block thereof and a tail block thereof as said block which should be discarded to said discarding unit (*detecting and deleting only a silence portion from a frame, Col. 11, Line 66- Col. 12, Line 4, which would inherently require a silence portion dividing means. Also, since only a silence portion would be deleted, it would be inherent that the header and tail block of the frame would be retained.*).

With respect to **Claim 11**, Saito further teaches the insertion of dummy data for deleted frames in a jitter buffer (*Col. 9, Lines 39-52*).

Kramer and Saito are analogous art because they are from a similar field of endeavor in data transmission systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kramer in view of Hatono with the dummy data insertion means as taught by Saito in order to replace deleted data (Col. 4, Lines 7-11), thus preventing any data discontinuities.

With respect to **Claim 12**, Kramer further discloses a low water mark relating to buffer underflow (Col. 6, Lines 19-32).

With respect to **Claim 13**, Kramer teaches the high water mark as applied to Claims 1-3. Upon exceeding the high water mark frames are deleted until the mark exceeding condition is eliminated (Col. 5, Lines 36-67).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Ohlsson et al (*U.S. Patent: 6,452,950*)- teaches an adaptive jitter buffer.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632 and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached at (571) 272-7582. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak
5/26/2005



DAVID L. OMETZ
PRIMARY EXAMINER